Referring now to FIGURE 2, an intracavity ultrasound probe 30 for three dimensional imaging which is constructed in accordance with the present invention is shown. The probe 30 includes a handle section 36 by which the user holds the probe for manipulation during use. At the rear of the handle is a strain relief 18 for the probe cable (not shown). Extending from the forward end of the handle 36 is the shaft 32 of the probe which terminates in a dome-shaped acoustic window 34 at the distal end through which ultrasound is transmitted and received during imaging. Contained within the distal end of the shaft is a transducer mount assembly 40 which is also shown in the cross-sectional view of FIGURE 3. A convex curved array transducer 46 is attached to a transducer cradle 48 at the distal end of the assembly 40. The transducer cradle 48 is pivotally mounted by a shaft 49 so it can be rocked back and forth in the distal end of the probe and thereby sweep an image plane through a volumetric region in front of the probe. The transducer cradle 48 is rocked by an oscillating drive shaft 50 which extends from a motor and shaft encoder 60 in the handle 36 to a gear 54 of the transducer cradle. The drive shaft 50 extends through an isolation tube 52 in the shaft which serves to isolate the moving drive shaft from the electrical conductors and volume compensation balloon 44 located in the shaft proximal the transducer mount assembly 40. The construction and operation of the rocking mechanism for the transducer cradle 48 is more fully described in concurrently filed US patent application serial number 10/599,306, entitled ULTRASONIC INTRACAVITY PROBE FOR 3D IMAGING, the contents of which are incorporated herein by reference. The echo signals acquired by the transducer array 46 are beamformed, detected, and rendered by the ultrasound system to form a three dimensional image of the volumetric region scanned by the probe.

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Amend the paragraph beginning on page 4, line 32 to read as follows:

Because ultrasonic energy does not efficiently pass through air, the array transducer 46 is surrounded by a liquid which is transmissive of ultrasound and closely matches the acoustic impedance of the body which is approximately that of water. The liquid is contained within a fluid chamber 42 inside the transducer mount assembly 40 which also contains the array transducer 46. Water-based, oil-based, and synthetic polymeric liquids may be used. In a constructed embodiment silicone oil is used as the acoustic coupling fluid in the transducer fluid chamber. Further details of the fluid chamber of the embodiment of FIGURE 2 may be found in concurrently filed US patent application serial number 10/599,317, entitled ULTRASOUND PROBE WITH MULTIPLE FLUID CHAMBERS, the contents of which are incorporated herein by reference.

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